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BEFORE COMPLETING FORM REPORT DOCUMENTATION PAGE 2. GOVT ACCESSION NO. 3. RECIPIENT'S CATALOG NUMBER DR-1*0*83 5. TYPE OF REPORT & PERIOD COVERED 4. TITLE (and Subtitle) 19702A GSRS, Missile Numbers BR-10, BR-8, Numbers B-50, B-51, 85 a rtaling 1977. CONTRACT OR GRANT NUMBER(e) White Sands/Meteorological: Team 1F665702D1 11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Cmd October 2279 Atmospheric Sciences Laboratory 13. NUMBER OF PAGES White Sands Missile Range, NM 88002 18 18. SECURITY CLASS. (of this report) 14. MONITORING AGENCY NAME & ADDRESS(If different from Controlling Office) US Army Electronics Research & Development Cmd UNCLASSIFIED 184, DECLASSIFICATION/DOWNGRADING SCHEDULE Adelphi, MD 20783 16. DISTRIBUTION STATEMENT (of this Report) 17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited. IS. SUPPLEMENTARY NOTES 19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Ballistics Meteorology 3. Wind 29. ABSTRACT (Continue on reverse side N necessary and identity by block number) Meteorological data gathered for the launching 19702A GSRS, Missile Numbers BR-10, BR-8, Round Numbers B-50, B-51 are presented in tabular form.

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INTRODUCTION

19702A GSRS , Missile Numbers <u>BR-10</u> and <u>BR-8</u>, Round Numbers <u>B-50</u> and <u>B-51</u>, were launched from <u>LC-33</u>, White Sands Missile Range (WSMR), New Mexico, at 1000 and 1000:03 MDT 25 October 1979. The scheduled launch times were 1000 and 1000:04 MDT

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

- (1) Standard surface observations to include pressure, temperature (°C), relative humidity, dew point (°C), density (qm/m^3), wind direction and speed, and cloud cover were made at the <u>LC-33</u> Met Site at T-0 minutes.
- (2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

SITE AND ALTITUDE

LC-33 2Km

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 78,500 feet in 500-feet increments.

SITE AND TIME

SMR 0900 MST

Accession For

NTIS SANAI

DEC TAB

Uncanounced

Justification

By

Distribution

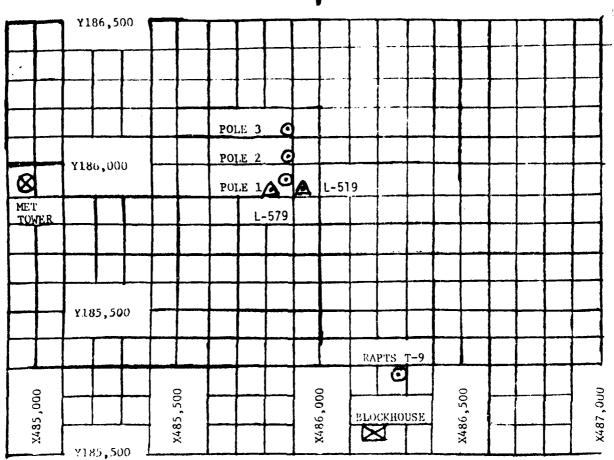
Availand/or

Special

A 23

1





- 1. MET TOWER 4 Bendix Model T-20 Anemometers at 12 it, of ft, 102 ft, and 202 ft with E/A recorders.
- 2. POLE ANEMOMETER Bondix Model T-120 with E/A recorders.
 - (a) Pole #1 38.7 it
 - (b) Pole #2 53.0 ft
 - (c) Pole #3 83.6 ft
- 3. RAPIS T-9 Ridar Automatic Pilot-Balloon Tracking System T-9 Badar.

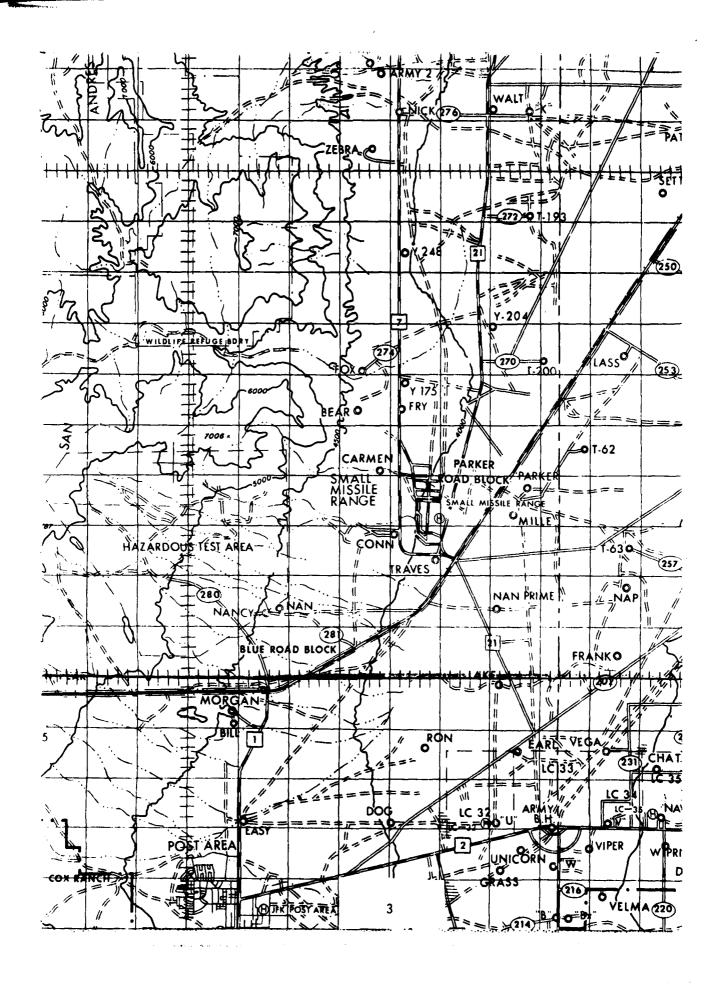


TABLE 1. Surface Observations taken at 1000 MDT, 25 October 1979, at LC-33, 19702A GSRS, Missile Numbers BR-10, BR-8 Round Numbers B-50, B-51.

| ELEVATION | 3977.30 | FT/MSL |
|-------------------|---------|-------------------|
| PRESSURE | 882.0 | MBS |
| TEMPERATURE | 17.9 | O _C |
| RELATIVE HUMIDITY | 40 | , |
| DEW POINT | 4.1 | °C |
| DENSITY | 1049 | GM/M ³ |
| WIND SPEED | 01 | KTS |
| WIND DIRECTION | 020 | DEGREES |
| CLOUD COVER | CLEAR | |

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

| | POLE #1 | | | POLE #2 | 2 | | POLE #3 | |
|---------------|------------|--------------|---------------|------------|--------------|---------------|------------|--------------|
| T-TIME SEC | DIR DEG | SPEED KTS | Y-TIME SEC | DIR DEG | SPEED KTS | T-TIME SEC | DIR DEG | SPEED KTS |
| -30 | 026 | 02 | -30 | 345 | 02 | -30 | 025 | 03 |
| -20 | 027 | 03 | -20 | 024 | 03 | -20 | 023 | 03 |
| -10 | 015 | 03 | -10 | 023 | 03 | -10 | 058 | 03 |
| 0.0 | 017 | 02 | 0.0 | 008 | 03 | 0.0 | 035 | 03 |
| +10 | 028 | 02 | +10 | 012 | 02 | +10 | 045 | 03 |

POLE #1 = X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft AGL

| TABLE | 2 | | | | | |
|----------|------------------------|--------------------------|--------|-------|---------|------|
| TYPE | 19702A GSRS | MISSILE NOS. BR-10, BR-8 | ROUND | NO S. | B-50. E | 3-51 |
| LAUNCHED | FROM LC-33 | DATE 25 October 1979 | _TIME_ | 1000 | MDT | |
| NOTE: WI | NO DIDECTIONS ARE REFE | DENCED TO TOUE MODIL | | | | |

LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

| | EL #1 Feet | 7 | LEVE 62 F | | |
|---------------|---------------|--------------|---------------|--------------|--------------|
| T-TIME SEC | DIR DEG | SPEED KTS | T-TIME SEC | DIR DEG | SPEED KTS |
| -30 | 018 | 01 | -30 | 028 | 03 |
| -20 | 018 | 02 | -20 | 028 | 03 |
| -10 | 018 | 01 | -10 | 028 | 02 |
| 0.0 | 024 | 01 | 0.0 | 028 | 02 |
| +10 | 024 | 01 | +10 | 033 | 01 |
| | EL #3 Feet | | LEVE 202 | L #4 Feet | |
| T-TIME SEC | DIR DEG | SPEED KTS | T-TIME SEC | DIR DEG | SPEED KTS |
| -30 | 004 | 03 | -30 | 009 | 03 |
| -20 | 012 | 02 | -20 | 015 | 03 |
| -10 | 012 | 01 | -10 | 038 | 03 |
| 0.0 | 022 | 01 | 0.0 | 039 | 03 |
| +10 | 024 | 01 | +10 | 042 | 03 |

WTSM COORDINATES: X484,982.64 Y185,057.73 H3983.00 (base)

TABLE 3

TYPE 19702A GSRS MISSILE NO S. BR-10, BR-8 ROUND NO S. B-50, B-51

LAUNCHED FROM LC-33 DATE 25 October 1979 TIME 1000 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

GSRS PILOT BALLOON MEASURED WIND DATA

| TABLE | 4 | | | | | | | | |
|---------------|----------------------|--------------|---------------|----------------------|--------------|-----|---------------|----------------------|--------------|
| RELEASED | FROM LC- | 33 D | ATE 25 Oc | tober 1979 | T | IME | 0950 | | MDT |
| TRACKER | COOR | RDINATES | (WSTM) X= | 486,037.2 | 4 | Y = | 182,350. | 16 H= | 3977.30 |
| MISSILE | TYPE <u>19702</u> | A GSRS | _MISSILE N | 0. <u>S. BR-10</u> , | BR-8 | | ROUND NO | .S. B-50, | B-51 |
| MISSILE | LAUNCHED FR | ROM_ LC-3: | 3_DATE_25 | October 197 | 9 | | TIME1 | 000 MDT | |
| NOTE: 1 | WIND DIRECT | IONS ARE | REFERENCE | D TO TRUE N | ORTH. | | | | |
| HEIGHT - | METERS AGE | | | | | | | | |
| HEIGHT AGL | DIRECTION DEGREES | SPEED KTS | HEIGHT AGL | DIRECTION DEGREES | SPEED KTS | | HEIGHT AGL | DIRECTION DEGREES | SPEED KTS |
| SFC | | CALM | | | | | | | |
| 90 | 104 | 04 | | | | | | | |
| 150 | 006 | 08 | | | | | | | |
| 210 | 014 | 12 | | | | | | | |
| 270 | 355 | 07 | | | | | | | |
| 330 | 800 | 11 | | | | | | | |
| 390 | 006 | 07 | | | | | | | |
| 500 | MISG | MISG | | | | | | | |
| 650 | MISG | MISG | | | | | | | |
| 800 | 125 | 05 | | | | | | | |
| 950 | 1 32 | 04 | | | | | | | |
| 1150 | 272 | 06 | | | | | | | |
| 1350 | 264 | 09 | | | ļ | | | | |
| 1550 | 250 | 04 | ļ | | | | | | |
| 1750 | 232 | 04 | ļ | | | | | | |
| 2000 | 184 | 09 | | | | | | | |
| | | | ļ | | | | | | |
| | | | | | | 1 | ļ | | |
| | | | | | | | | | |
| | | | | | <u> </u> | | | | |

GSRS PILOT BALLOON MEASURED WIND DATA

| TABLE 5 | | | | | | | | | |
|---------------|----------------------|-----------|---------------|----------------------|--------------|------------|---------------|----------------------|---------------------------------------|
| RELEASED | FROM LC-33 | <u> </u> | ATE 25 00 | tober 1979 | | [ME | 1000 | | MDT |
| TRACKER | COOR | DINATES | (WSTM) X | 486,037.2 | 24 | / = | 182,350. | 16 н= | 3977.30 |
| MISSILE | TYPE <u>19702/</u> | A GSRS | _MISSILE M | 10S. BR-10, | BR-8 | | _ROUND NO | \$. B-50, B- | -51 |
| MISSILE | LAUNCHED FR | 10M_LC-33 | 3 DATE 25 | October 197 | 19 | | TIME | 1000 MDT | |
| NOTE: | WIND DIRECT | TIONS ARE | REFERENC | ED TO TRUE N | NORTH. | | | | |
| нетект - | METERS AGL | | | | | | | | |
| HEIGHT AGL | DIRECTION DEGREES | SPEED KTS | HEIGHT AGL | DIRECTION DEGREES | SPEED KTS | | HEIGHT AGL | DIRECTION DEGREES | SPEED KTS |
| SFC | | CALM | | | | | | | |
| 90 | 050 | 04 | | | | | | | |
| 150 | 004 | 08 | | | | | | | |
| 210 | 005 | 10 | | | | | | | |
| 270 | 009 | 08 | | | | | | | |
| 330 | 800 | 10 | | | | | | | |
| 390 | 014 | 06 | | | | | | | |
| 500 | 006 | 01 | | | | | | · | |
| 650 | 322 | 02 | | | | | <u></u> | | |
| 800 | 140 | 02 | | | | | | | |
| 950 | 130 | 04 | | ļ | | | | | |
| 1150 | 260 | 03 | | | | | <u> </u> | | · |
| 1350 | 272 | 10 | | | | | | | |
| 1550 | 260 | 05 | | | | | | | |
| 1750 | 222 | 03 | | | | | | | · · · · · · · · · · · · · · · · · · · |
| 2000 | 183 | 08 | | <u> </u> | | | | | |
| | | | ļ | | | | | | |
| | | | | <u> </u> | | | | | |
| | | | | | | | | | |
| | | | | 1 | <u> </u> | | | | |

STATION ALTITUDE 3997.30 FEET MSL 25 Oct. 79 0900 HRS MST ASCENSION NO. 363

SIGNIFICANT LEVEL DATA 2960060363 S M R

GEODETIC COONDINATES 32.48034 LAT DEG 106.42307 LON DEG

TABLE 6

| REL . HUM. PERCENT | 38.0 | - C- | 32.0 | 27.0 | C . C C |
|---|--------|--|--------|--------|-------------|
| TEMPERATURE IR DEWPOINT REES CENTIGRADE | 1.2 | L -1 | | -1.3 | 3 0 1 |
| TEMPE AIR Degrees | 15.4 | 13.3 | 16.0 | 17.9 | 11,1 |
| GEOMETRIC ALTITUDE MSL FEET | 3997.3 | 4425.2 | 5008.5 | 6082.2 | 10000 |
| PRESSURE MILLIBARS | 881.5 | 868.0 | 850.0 | 818.0 | 700.0 |

| 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | |
|--|--------|
| 1111111 11111111 111111111 11111111111 | |
| 2010 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | |
| 3997.3 4425.2 5008.5 5008.5 10402.9 119976.8 11998.4 119976.8 11976.8 11976.8 11976.8 11976.8 11976.9 11976.9 11976.9 11976.1 11976.1 11976.9 11976.9 11976.9 11976.9 11976.9 11976.9 | |
| 8811 88589 88589 88589 74589 8859 88 | , ; |

| STATION AL | VDE 39 | 97.30 FEET MSI 0900 HRS MST | T MSL MST | - | UPPER AIR DATA 2980000363 SMR | UATA 53 | | GEODETIC 32.4 | C00F |
|----------------------|-----------|--|-----------------------------------|------------|-------------------------------------|----------------|---------------------------|------------------|-------------------|
| ASCENSION NO. | NO. 363 | ı | | | - L | | | 106. | 106.42307 LON DEG |
| | | | | | IABLE / | | | | |
| GEOME TRIC | PRESSURE | TEMP | EKATURE | REL . HUM. | | Ä | WIND DAT | TA | INDEX |
| ALITIONE MSL FEET | MILLIBARS | AIR DEGREES | AIR DEWPOINT EGREES CENTIGRADE | PERCENT | GM/CUBIC METER | SCUND KNOTS | DIRECTION DEGREES (TN) | SPEED | OF REFRACTION |
| 3997.3 | 881.5 | 15.4 | 1.2 | 38.0 | 1061.2 | 662.7 | | • | 1.000267 |
| 4000.0 | 81 | | | 38.0 | 061. | N | 300.1 | • | 00026 |
| 4500.0 | 5 | ÷ | in. | 37.3 | 047 | 661 | 300.1 | Φ. | • |
| • | 50. | ġ | 9. | S | 1021.7 | 663 | 300.1 | 1.6 | ٠ |
| 5500.0 | 5 | • | 6. | 29.7 | 000 | 664.3 | 300.1 | • | ٠ |
| • | 820.4 | 17.8 | -1.3 | ~ | 6.626 | 9 | | 3.3 | • |
| _ | 805.8 | | -2.1 | ഴ | 64.3 | 999 | ဗ္ဗ | • | • |
| 7000.0 | 791.4 | 16.5 | -3.1 | 25.9 | ÷ | 663. | • 0 · | 4.7 | •00023 |
| 7500.0 | 777.2 | ທ | -4-1 | ທຸ | ណំ | 662 | t (| | 0005 |
| • | 763.3 | 14.9 | -5.1 | # | 921.3 | 661. | 9 | n. | • |
| • | 749.7 | # | 0.9- | 24.5 | 907.5 | 999 | 40 | α· • | 2000 |
| 0.0006 | 736.3 | ņ | -7.0 | 23.6 | 893.8 | 660. | 227.3 | 9.4 | 1.000216 |
| | 723.2 | 12.5 | -8.0 | 23.0 | 880.3 | 659 | 0.5 | 9 0 1 | 1.000212 |
| 100001 | 710.2 | ~ | 0.6- | 22.5 | 867.1 | | 189.1 | 0 • <i>i</i> | 00020 |
| • | 697.5 | 0 | 6.6 | 22.1 | 854.1 | 657 | 5°//T | 9. 9. | 1.000204 |
| • | 9.489 | 8.6 | 0 | 22.3 | 841.6 | 659 | 7.4.7 | 9.6 | 1.000200 |
| • | 672.0 | 6 | (| 22.0 | 829•3 | 654.5 | 1/3•4 | 10.0 | 1.000197 |
| • | 0000 | 0 u | N P | , v | 7.100 | ດ : | 7 · · · | 0 | 10001 |
| • | 7.464 | יים מים | 113.0 | 22.5 | 805.5 | 024.0 | 2000 0000 | о п | 1.000190 |
| | 6030 | 0 a | 10 T | 0 K | 78.0 | 000 | 236.4 | n e | 1.000167 |
| | 612.2 | in in | 15.3 | 24.1 | 770.7 | 543 | 308.2 | 200 | 1.000164 |
| | 6.009 | 2.5 | . ~ | 54.50 | 759.5 | | 340.6 | 1.00 | |
| 15000.0 | 589.9 | 1.1 | -16.9 | 24.7 | 748.5 | | 347.0 | 7.1 | |
| _ | 579.0 | • | | 54.9 | 737.6 | | 350.4 | 9.1 | 1.000172 |
| 10000 | 508.0 | ~ | 17 | 56.6 | 726.8 | | 347.5 | 10.7 | • |
| • | 557.1 | , t | co (| 28.6 | 716.1 | 641. | 3+40 | 12.0 | • |
| _ | 040 | 9.5 | മെ | 30.7 | ŝ | 639. | 335.0 | . | .00016 |
| 1.500.0 | 505.7 | ************************************** | 181- | 32. | 645•3 | 636 | 320.2 | 2.11 | 1.000162 |
| | 515.7 | 0 1 | > (| 7.5 | 2.000 | 030 | 0.440 | 9.01 | .00016 |
| _ | -010 | 2 | 7 (| 0.00 | 2.0,0 | 635 | ? | 10.1 | •00015 |
| 0000 | 0.000 | 9.0 | 202 | • | 665.3 | 634. | * ! | 11.5 | •00012 |
| • | 0.96+ | | 20 | 42.1 | 655.6 | 635. | 20 | 12.8 | 00015 |
| _ | 400 | ┥ . | 20 | • | 645.8 | 631. | 6 | ÷ | • |
| | 0.0/1 | 12.5 | -22.3 | No | 6329 | 629 | 10 | 16.4 | 00014 |
| • | • • | → . | į | | 626.1 | 6 28 | : ; | 17 | •0001 |
| _ | 9 9 | ┥. | • | : . | 616.5 | 626 | 5.678 | <u>.</u> | 00014 |
| | 30, | 1000 | 9 0 | 40 | 1 C | 0.00 | 2000 | - | •00013 |
| 230000 |) 17 | 9 1 | 2.00- | | 09/60 | 624.6 | 276.1 | 0 · 0 | 0 (|
| | • | - | • | | • | , | 0.0.7 | 1.67 | 1.000133 |

| DETIC COORDINATES 32.48034 LAT DEG | | INUEX | OF REFRACTION | 1-000131 | 1.000128 | 1.000126 | 1.000124 | 1.000127 | .00011 | | 1.000114 | | • | | 1.000106 | 1.000105 | • | | 1.000099 | 1.000097 | 1.000095 | 1.000093 | 1.000092 | 1.000090 | 1.000068 | 1.000086 | 1.000085 | 1.000003 | 1-000062 | 1.000000 | • | • | 1.000074 | 1.000073 | 1-000071 | 1.000070 | 1.000069 | 1.000067 | 30000· | 1.000065 | 1.000064 |
|---|------------|-------------|--------------------------|----------|----------|-----------|----------|----------|--------|--------------|----------|---------|---------|---------|----------|----------|---------|-------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|----------------|----------|----------|-----------|-------|----------|----------|------------|----------|----------|----------|--|------------|----------|
| SEODETIC 32.40 | | DATA | SPEED | 26.1 | 25.4 | 7 * * 7 | 6000 | 7.97 | 28.7 | 30.6 | 32.6 | 34.8 | 37.1 | 39.5 | 42.5 | 45.9 | • | 47.3 | • | 40.3 | 34.5 | 27.9 | å, | 14.3 | 6.6 | | S (| Э с 0 а | | 12.0 | 13.9 | 14.9 | ຜ | 15.3 | 15.6 | 15.8 | 15.8 | 15.8 | 16.1 | 16.5 | 17.3 |
| | | WIND DA | DIRECTION DEGREES(TN) | 274.5 | 273.2 | 277.2 | 2000 | 263.1 | 283.3 | 282.4 | 281.3 | 280•3 | 278.7 | 277-1 | 275.3 | 273.7 | 272.9 | 272.4 | 272.9 | 274.0 | 275.4 | 277.7 | 280.5 | 284 • 3 | 290.9 | 1.662 | 100 F | 309°C | 303.5 | 302.5 | 303.6 | 305.0 | 307.0 | 307-1 | 305.4 | 305-1 | 306.5 | 307.4 | 307.7 | 307.9 | 307.9 |
| DATA 53 | (CONT) | SPEED OF | SOUND | 621.6 | | | | 615-1 | | 612.3 | 610.8 | 609.3 | 607.8 | 606.3 | 8.409 | | | | | | | | | | | | | 2005 | 5 A A C | 567.2 | 565.8 | 585.1 | 564.5 | 583.5 | 582.5 | 581.5 | 560.2 | 578.9 | | | 574.9 |
| UPPER AIR DATA 2980060353 S M R | TABLE 7 (C | (| GM/CUBIC METER | 578.0 | 563.8 | 550.7 | 7.000 | 532.7 | 524.0 | 515.4 | 507.0 | 498.7 | 490.5 | 482.5 | 474.7 | 466.9 | 429.4 | 451.9 | 9•444 | 437.0 | 428-6 | 419.7 | 411-1 | 402.6 | 394.2 | 387.0 | 389.0 | 36.00 R616F | 359.9 | 353.5 | 347.2 | 340.1 | 333.1 | 326.6 | 320-2 | 314.0 | 308.0 | 362.1 | 296.4 | ċ | 285.3 |
| | • | REL. HUM. | PERCEN | 25.4 | 23.4 | 20.0 | 0.00 | 20.0 | 20.0 | 20.3 | 20.8 | 21.3 | 21.8 | 22.3 | 22.8 | 23.4 | 23.9 | 24.4 | ο. | 8.9** | | | | | | | | | | | | | | • | | | | | | | |
| T MSL MST | | TEMPERATURE | CENTIGRADE | -33.6 | -35.3 | 7 - 0 K - | 0 t d t | 1000 | -41.3 | -42.2 | -43.0 | 43.8 | 9.55 | 45.5 | -46.3 | -47.2 | 148.0 | -48.9 | 6 | -59.1 | | | | | | | | | | | | | | | | | | | | | |
| 97.30 FEET MSL 0900 HRS MST | | TEMP | DEGREES | -18.7 | -19.7 | 8.101 | 0.00 | -23.9 | -25.0 | -26.1 | -27.3 | -28.6 | -29.8 | -31.0 | -32.2 | -33.4 | -34.6 | -35.8 | -37.0 | -38.1 | -38.8 | -39.1 | 4.65- | -39.7 | 0.04- | 2000 | 0 · 1 · 1 | -43.9 | 6.44- | 0.94- | 0.74- | 9.44- | -48.1 | -48.8 | 9.61- | -50.4 | -51.3 | NΙ | ე: ე: | † 1 | -00° |
| TITUDE 39 | | PRESSURE | MILLIBARS | 22 | 413.9 | 347.3 | 3,49.2 | 361.2 | 373.3 | 30°5°5 | 557.8 | 250.2 | 242.1 | 0.000 | 328.3 | 321.4 | 214.6 | 307.9 | 301.3 | 294.8 | 288.4 | 282.0 | 275.9 | 269.8 | 263.9 | 4.00° | 202.7 | 241.2 | 235.8 | 230.5 | 225.4 | 220.2 | 215.2 | 210.3 | 205.5 | 200.8 | 19001 | 5 | 00 | 0.791 | S |
| STATION AL 25 OCT: 79 ASCENSION I | | GEUMETRIC | MSL FEET | 0 | Z4000.0 | 25000.0 | 25,000,0 | | | \mathbf{c} | ~ | 28000.0 | 48500.0 | 2,000,0 | 29500.0 | 20000-0 | 20200.0 | 200 | 31500.0 | 32000.0 | 32500.0 | 33000.0 | 33500.0 | 34000.0 | 34500.0 | 0.000 | 0.00000 | 300000 | 37000.0 | 37500.0 | 38000 · n | 9 | ٥٥ | _ | ~ (| 40500 | - | 9 | ֓֞֜֜֜֜֜֜֞֜֜֜֓֓֓֓֜֜֜֓֓֓֓֓֓֓֓֡֓֜֜֡֓֓֓֓֓֡֓֜֡֓֡֓֡֓֡֡֓֡ | 0.00524 | 200 |

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

| STATION AL | ALLITUDE 3997 | 97.30 FEET MSL | | _ | UPPER AIR DATA | DATA | | | |
|------------------|---------------|------------------------------|---|-----------|----------------|-----------------|-----------------|----------------|-----------------|
| | 26.4 | 60 | ī | | SAR | 3 | | 32. | න අ |
| NOTE NAME OF A | • | | | • | TABLE 7 (C | (CONT) | | 106. | S O S |
| GEOME THIC | PRESSURE | TEMPERATURE ATP DE MODINE | _ | REL. HUM. | DENSITY | Ä | WIND DAT | T.A. | INCEX |
| MSL FEET | MILLIBARS | DEG | _ | | | STONA SNOTS | DESKEES (IN) | SPEED KNOTS | REFRACTION |
| 43200.0 | 174.1 | -56.4 | | | 279.9 | 573,5 | 307.9 | 18.3 | 1.000062 |
| | 170.0 | -57.4 | | | 274.6 | 572.2 | 308.1 | 19.8 | 1.000061 |
| 44500.0 | 156.0 | -58.5 | | | • | 570.8 | 308•3 | • | 1.000060 |
| ~ | 62. | • | | | 264+3 | 569.5 | 309.6 | 23.3 | 1.000059 |
| 2 | 58• | +e0• | | | 259+2 | | 310.8 | 25.3 | 1.000058 |
| 2 | 54. | • | | | 253.8 | 567.3 | 314.1 | 26.5 | 1.000057 |
| 900 | 200 | 61. | | | 243.5 | 550.3 | 317.5 | 27.7 | 1.000055 |
| 0.000/+ | ÷ : | -62.0 | | | 243.3 | 565.3 | 318.5 | 28.4 | 37000 |
| 20 | 2 6 | 1.00 | | | 1.8CZ | 564.5 | 0.010 | 8 . S | 00000 |
| 0.000 | • | 10 | | | 1.502 | • | 0110 | 100 | ຣດດດດ |
| | 0 | V-+0-1 | | | 1.822 | | 0100 | 7.7.7 | 50000 |
| 0.00000 | 155.0 | 100- | | | 243.5 | 261 | 7777 | 20°5 | 00000 |
| 500005 500005 | 125.5 | 100-1 | | | 218.0 | 200 | 0.440 0.8418 | יי אר | *0000 |
| 50500•0 | 123.4 | -68.0 | | | 7.006 | 55.8 | 313.6 | 0.00 | 2 4 1 0 0 0 4 E |
| 51000.0 | 120.3 | -68.7 | | | 2050 | 7.7 | 410.0 | 9 40 | |
| 51500.0 | 117.3 | -69.5 | | | 200-7 | 50.0 | 313.1 | 7 to 0 | 1.000045 |
| 52000.0 | 114.4 | -70-2 | | | 196.5 | | 313.5 | 23.8 | 1 • 0000#4 |
| 52500.0 | 111.6 | -71.0 | | | 192•3 | 553 | 315.6 | 23.4 | +00000+ |
| 53000.0 | 108.8 | -71.6 | | | 188.0 | 553.1 | 319.2 | 23.0 | 1.000042 |
| 0.00000 | 100.0 | 0 7 7 1 | | | 163.4 | 552.9 | 2000 | 22.5 | 1 • 000041 |
| 24.00.42 | 1001 | 12.0 | | | 0.6/1 | 052.0 | 2000 | 21.5 | 10000 |
| 00000 | 98.2 | -72.6 | | | 170.5 | 552.0 56.1.0 | 304.6 | 200.7 | E0000 |
| 55500.0 | 95.6 | -73.1 | | | 166.5 | 551.1 | 3000 | 0.00 | 1.000038 |
| 5e000•0 | 93.2 | -73.6 | | | 62. | 550.4 | 337.3 | 20.7 | 44.0000 |
| 56500.0 | 8.06 | -74.1 | | | 158.9 | 549.7 | 334.7 | 21.2 | 1.000035 |
| 57,000.0 | 88.5 | 9-14- | | | 155.2 | 549.0 | 333.5 | 21.1 | 1.000035 |
| 5/500.0 | 80.40 | -75-1 | | | 151.6 | 548 | 333.8 | 20.2 | 1.000034 |
| 0.00000 | 200 | 10.1 | | | 146.0 | 547 | 334.2 | 19.2 | •00003 |
| 0.00.00 | 6-19 | 9.4/- | | | 143.6 | 549 | 337.3 | 18.1 | • |
| ٥ | 0.7. | 2.00 | | | • | 550.0 | 340.6 | ~ | |
| | 9.77 | 175.0 | | • | 135.4 | 551.1 | T • 7 + 7 | • | •00003 |
| | 71.8 | 2471 | | | • | 552.2 | • | å. | ·00005 |
| | 22.0 | 7.07 | | | • | 555 | 340.5 | • | • 00005 |
| | 70.7 | 70.0 | | | • | 0 m | N | ÷ (| -00005 |
| 0000 | 4 3 4 5 7 V | 7.0.4 | | | 7.021 | ບໍ່ຕ | 0 u | • | -00002 |
| 000 | 7.99 | -69-3 | | | 113.9 | 550 | 358.5 | | 00002 |
| Ö | 65.0 | 6 | | | 110.9 | 56. | 58. | 11.5 | 1.000025 |

| DETIC COORDINATES 32.48034 LAT DEG | | INDEX OF REFRACTION | 1.000024 | 1.000023 | 1.000023 | 1.000022 | 1.000021 | 1.000021 | 1.000020 | 1.000020 | 1.000019 | 1.000019 | 1.000018 | 1.000018 | 1.000017 | 1.000017 | 1.000016 | 1.000016 | 1.000016 | _ ` | | _ | | - | ~ | | 1.000013 | | | 1.000012 | 1.000011 | 1.000011 | 1.000011 |
|---------------------------------------|-------------|---|----------|----------|----------|------------------------|----------|----------|----------|----------|----------|----------|-------------|------------|----------|----------|----------|----------|----------|-----------|---------|--------|--------------|---------|----------|---------|----------|---------|---------|----------|----------|----------|----------|
| 6EODETIC 32.46 | | SPEED KNOTS | 13.2 | 15.5 | 17.6 | 18.7 | 20.0 | 19.9 | 19.3 | 19.1 | 17.4 | 15.8 | 13.3 | 8.6 | 4.1 | 3.6 | 5.2 | 6.7 | 8.0 | ** | 10.9 | 8·/ | 0°0 | O.N. | 3.6 | 5.3 | 6.9 | 7.8 | 0.6 | | | | |
| | | WIND DATA DIRECTION 5 DEGREES(TN) K | 2.4 | 6.3 | 9.6 | 15.0 | 19.6 | 26.1 | 24.7 | 43.6 | 48.7 | 24.7 | ₩•09 | 62.6 | 0.48 | 1.66 | 7.16 | 91.3 | 62.8 | 1.51 | 68.7 | 63.7 | 5.64 | 328.9 | 324.3 | 323.7 | 324.4 | 336.2 | 345.2 | | | | |
|)ATA 53 | (CONT) | SPEED OF SOUND KNOTS | 557.0 | 557.9 | 560.1 | 561.3 | 562.0 | 562.8 | 563.6 | 564.4 | 565.2 | 565.9 | 566.7 | 567.5 | 568.2 | 569.0 | 569.8 | 5,69.9 | 569.4 | | | | | | | 569.1 | 570.8 | | | | 573.7 | 573.5 | 573.2 |
| UFPER AIR DATA 2980060363 S M R | TABLE 7 (C | DENSITY S GM/CUBIC METER | 108.0 | 104.9 | 101.6 | 9.96 | 0•96 | 93.4 | 9.06 | 83.4 | 86.0 | 83.7 | 81.4 | 79.2 | 77.1 | 75.1 | 73.1 | 71.3 | 2.69 | 68.1 | 9.09 | 65.1 | 63.6 | 62.2 | 60.7 | 58.4 | 57.2 | 55.5 | 53.9 | . 52.6 | 51.4 | 50.3 | 49.1 |
| - | | REL.HUM. PERCENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ET MSL MST | | TEMPERATURE R DEWPOINT EES CENTIGRADE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 97.30 FEET MSL 0900 HRS MST | | TEM AIR DEGREES | -68.7 | -68.1 | -66.5 | -65.6 | -65.0 | h• h9- | -63.9 | -63.3 | -62.7 | -62.1 | -61.5 | -61.0 | -60.4 | ₽•65- | -59.3 | -59.5 | -59.5 | -59.8 | -60.1 | 4.09- | -60.8 | -61.1 | -61.0 | -59.7 | -58.5 | -57.3 | -56.0 | -56.1 | -56.3 | -56.5 | -56.7 |
| TITUDE 39 | • | PRESSURE MILLIBARS | 63.4 | 61.8 | 9 | 58. | 57.3 | 52. | 54. | 53.2 | 51. | 50• | | • ₽ | 47. | † | 6.44 | 43 | 42.B | 41 | | | | | | | , | | 33. | 32. | | 31. | 30• |
| STATION AL | No constant | GEOMETRIC ALTITUDE MSL FEET | 03500.0 | 64000 | 64500.0 | 65 ₀ 00 • 0 | 0.00550 | 66000-0 | 65500.0 | 67000.0 | 67500.0 | 68000.0 | 0.00589 | 0.00069 | 0.00560 | 700000 | 70500.0 | 71000.0 | 71500.0 | 72000.0 | 72500.0 | 730000 | 73500.0 | 74000·0 | 74,000.0 | 75000.0 | 75500.0 | 76000.0 | 76500.0 | 77000.0 | 77500.0 | 78000-9 | 78500.0 |

GEODETIC COORDINATES 32.48034 LAT DEG 106.42307 LON DEG

TABLE 8

| | S E O | DE A A A A A A A A A A A A A A A A A A A | TEMPERATURE OEWPOINT EES CENTIGRADE 1000 110 | AEL . HUM. 32. 32. 22. 23. 24. 32. 40. 32. 20. | UNI NOT NOT NOT NOT NOT NOT NOT NOT NOT NOT | ATA SPEED SPEED 10.7 10.7 10.8 10.8 10.8 10.8 10.8 10.8 10.8 10.9 |
|--|--|--|--|---|---|---|
| 125 100 100 100 100 100 100 100 100 100 10 | 50126. 54472. 58742. 61324. 64352. 72587. | 167.6 173.2 173.9 166.2 161.8 150.4 | | | 313.6 335.1 355.8 10.4 65.7 | 255.1 17.22 17.20 17.70 9.0 |